

TRIAL EXHIBIT #	DESCRIPTION	DATE	BEGBATES	ENDBATES	Dep. Exhibit #	Plfs.' Ob.	Defs.' Obj
1	US Patent No. Certified copy of US Patent No. 8,962,321	2/24/2015	AIRM00293424	AIRM00293493	Pl. Ex. 123 Def. Ex. 071 [Different Bates] Lu Ex. 12 [Different Bates]		
2	Certified copy of US Patent No. 8,961,956	2/24/2015	AIRM00290412	AIRM00290497	Pl. Ex. 122 Def. Ex. 064 [Different Bates] Lu Ex. 13 [Different Bates]		
3	Copy of Provisional App. No. 61/670,787	6/18/2012	AIRM00296616	AIRM00296646	Pl. Ex. 006		
4	Patent Application 61/670,787	6/12/2012	N/A		Pl. Ex. 006 [Different Bates] Def. Ex. 73		
5	Copy of Provisional App. No. 61/762,961	11/5/2012	AIRM00296647	AIRM00296675	Pl. Ex. 007		
6	Lu, S. J. et al., Generation of Functional Hemangioblasts from Human Embryonic Stem Cells, Nature Methods, 4:501-09 (2007)	3/20/2007	AIRM00289971	AIRM00289979	Pl. Ex. 009 Lu Ex. 1 [Different Bates]		
7	Sato, N., et. al., Maintenance of Pluripotency in Human and Mouse Embryonic Stem Cells through Activation of Wnt Signaling by a Pharmacological GSK-3-Specific Inhibitor, Nature Medicine, 10(1):55-63 (2004)	1/1/2004	AIRM00289996	AIRM00290004	Pl. Ex. 011		
8	Excerpted copy of File History for U.S. Patent No. 9,745,551 (U.S. Patent Appl. 14/413,290) as used in Cheng Deposition	1/7/2015	AIRM00293495	AIRM00295992	Pl. Ex. 012 (Excerpt)		
9	Wang, X., et al., Human ESC-Derived MSCs Outperform Bone Marrow MSCs in the treatment of an EAE Model of Multiple Sclerosis, Stem Cell Reports, 3:115-130 (2014)	7/8/2014	AIRM00289980	AIRM00289995	Pl. Ex. 024		
10	Mesenchymal Stem Cell Population Derived from Human Pluripotent Stem Cells Displays Potent Immunomodulatory and Therapeutic Properties, Kimbrel (2014)	3/20/2014	AIRM00289957	AIRM00289970	Pl. Ex. 025		
11	E-mail from E. Kimbrel to X. Wang re Hi Collaboration attaching protocols	8/11/2010	IMSTEM-0001523	IMSTEM-0001530	Pl. Ex. 030 Def. Ex. 067 Lu Ex. 06 Fortier Ex. 17		
12	X. Wang Lab Notebook #31 (redacted version)	3/12/2010	IMSTEM-0030785	IMSTEM-0030978	Pl. Ex. 033		

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13	E-mail from S. Lu to E. Kimbrel, R. Xu, and X. Wang re in vivo MSC Collaboration	11/18/2011	IMSTEM-0004720	IMSTEM-0004721	Pl. Ex. 035		
14	E-mail from X. Wang to R. Xu re HB-MSC_disclosure_0712112 attaching invention disclosure form and attached figures	7/13/2012	IMSTEM-0009108	IMSTEM-0009125	Pl. Ex. 038		
15	E-mail from X. Wang to D. Liu re EAE Reagents	7/14/2011	IMSTEM-0008426	IMSTEM-0008427	Pl. Ex. 040		
16	E-mail from J. Lu to X. Wang, Copying E. Kimbrel and R. Xu re Collaboration and attaching methodology paper	7/26/2010	IMSTEM-0001004	IMSTEM-0001006	Pl. Ex. 041 Lu Ex. 03		
17	E-mail from E. Kimbrel to X. Wang re Hi Collaboration	8/5/2010	IMSTEM-0001547	IMSTEM-0001551	Pl. Ex. 042		
18	ImStem Biotechnology, Inc. Incoporporation Agreement	5/29/2012	IMSTEM-0040593	IMSTEM-0040601	Pl. Ex. 054		
19	E-mail from R. Xu to M. Men, copying X. Wang re ImStem Business Plan (Draft) attaching business proposal	3/12/2012	IMSTEM-0040434	IMSTEM-0040453	Pl. Ex. 056		
20	E-mail from X. Wang to M. Men re testing iPSC-MSC in EAE	8/6/2013	IMSTEM-0031133	IMSTEM-0031134	Pl. Ex. 066		
21	Ren-He Xu Curriculum Vitae	3/4/2019	IMSTEM-0027865	IMSTEM-0027888	Pl. Ex. 072		
22	E-mail from E. Kimbrel to R. Xu and X. Wang, copying J. Lu, re data and info for grants attaching Generation of MSCs from hESC-derived Hemangioblasts and a presentation of figures	12/22/2010	IMSTEM-0001630	IMSTEM-0001634	Pl. Ex. 075		
23	E-mail from X. Wang to R. Xu re Tmart-1	4/27/2011	IMSTEM-0045332	IMSTEM-0045333	Pl. Ex. 078		
24	E-mail from the ACC Office to X. Wang and R. Xu re Animal Protocol 100194-0314 Approved on 6/8/2011	6/8/2011	IMSTEM-0003560	IMSTEM-0003560	Pl. Ex. 080		
25	E-mail from R. Xu to E. Kimbrel and X. Wang, copying S. Lu, re collaboration	12/9/2011	IMSTEM-0004606	IMSTEM-0004607	Pl. Ex. 081 Fortier Ex. 14		
26	E-mail from R. Xu to X. Wang re Budget and Plan attaching ImStem patent highlighted	4/2/2012	IMSTEM-0040416	IMSTEM-0040421	Pl. Ex. 082		
27	E-mail from R. Xu to E. Kimbrel and X. Wang, copying S. Lu, re in vitro data disclosure	4/2/2012	IMSTEM-0005466	IMSTEM-0005468	Pl. Ex. 083 Fortier Ex. 15		
28	International Patent Search Report, PCT/US2013/048291	2/21/2014	AIRM00295409	AIRM00295434	Pl. Ex. 111		
29	Amendment to Patent Application 14/413,290	1/17/2017	AIRM00295774	AIRM00295810	Pl. Ex. 112 Pl. Ex. 084		

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30	Article: Bunnell, et al. New Concepts on the Immune Modulation Mediated by Mesenchymal Stem Cells. <i>Stem Cell Research & Therapy</i>	11/11/2010	N/A		Pl. Ex. 121		
31	Caplan, A.I. & Dennis, J.E., Mesenchymal stem cells as trophic mediators, <i>J. of Cellular Biochemistry</i> , 98:1076-1084 (2006)	2006	AIRM00299338	AIRM00299346	Pl. Ex. 126		
32	Article: Pachon-Pena, et al. Stromal Stem Cells From Adipose Tissue and Bone Marrow of Age-Matched Female Donors Display Distinct Immunophenotypic Profiles. <i>J. of Cellular Physiology</i>	9/20/2010	N/A		Pl. Ex. 129		
33	U.S. Patent Application Publication No. US2009/0111177	4/30/2009	AIRM00298309	AIRM00298354	Pl. Ex. 132 Brivanlou Ex. 5		
34	Sato, N. & Brivanlou, A.H., Manipulation of Self-Renewal in Human Embryonic Stem Cells Through a Novel Pharmacological GSK-3 Inhibitor, in Human Embryonic Stem Cell Protocols, 115-128 (Humana Press, 2006) with book cover	1/1/2006	AIRM00290005	AIRM00290018	Pl. Ex. 134		
35	U.S. Provisional Patent Application 61/565,358	1/6/2012			Def. Ex. 062		
36	Lab Meeting slides Altering Hemangioblast Growth Conditions Exploration of Mesenchymal Stem Cells Differentiation of Blasts into Dendritic cells	11/24/2009	AIRM00281690	AIRM00281713	Def. Ex. 065		
37	International Patent Application WO 2014/011407	1/16/2014	AIRM00037251	AIRM00037387	Def. Ex. 070		
38	E-mail from R. Lanza to S. Lu re Pluristem attaching PSTI -Pluristem Company profile Jan 2008 Regenerative Medicine	9/20/2009	AIRM00223725	AIRM00223731	Def. Ex. 074		
39	E-mail from E. Kimbrel to X. Wang re data and info for grants	3/28/2011	IMSTEM-0002553	IMSTEM-0002556	Fortier Ex. 13		
40	File History for U.S. Patent No. 9,745,551 (U.S. Patent Appl. 14/413,290)	1/7/2015	AIRM00293495	AIRM00295992			
41	Astellas' U.S. Patent No. 8,017,393	9/13/2011	AIRM00296310	AIRM00296387			
42	Rasmussen, I. et al., Mesenchymal Stem Cells Stimulate Antibody Secretion in Human B Cells, <i>Scandinavian J. of Immunol.</i> , 65:336-343 (2007)	1/7/2007	AIRM00297382	AIRM00297389			

TRIAL EXHIBIT #	DESCRIPTION	DATE	BEGBATES	ENDBATES	Dep. Exhibit #	Plfs.' Ob.	Defs.' Obj
43	E-mail from E. Kimbrel to J. Chu re array info with attachments	8/23/2012	AIRM00051817	AIRM00051837			
44	Data slides (with metadata sheet attached)	1/25/2010	AIRM00200724	AIRM00200730			
45	Kimbrel lab notebook No. 005	5/1/2009	AIRM00290141	AIRM00290340			
46	E-mail from X. Wang to E. Kimbrel, copying R. Xu and J. Lu	11/5/2012	AIRM00023998	AIRM00024002			
47	Erin Kimbrel Lab Notebook No. 160	7/18/2011	AIRM00249127	AIRM00249323			
48	File History for U.S. Patent No. 8,962,321 (U.S. Patent Appl. 13/691,349)	11/30/2012	AIRM00290498	AIRM00293423			
49	E-mail from X. Wang to A. Lazorchak re here is theirs	6/21/2013	IMSTEM-0022056	IMSTEM-0022290			
50	E-mail from J. Lu to X. Wang, copying E. Kimbrel and R. Xu re "Collaboration" attaching Lu, S. J. et al., Directed Differentiation of Red Blood Cells from Human Embryonic Stem Cells, Methods in Molecular Biology, 636:105-21 (2010)	7/26/2010	AIRM00013841	AIRM00013860			
51	E-mail from X. Wang to R. Xu attaching 2012 Grant application and publications	1/13/2012	IMSTEM-0040208	IMSTEM-0040281			
52	E-mail from X. Wang to Y. Huang re pre-pre-IND Telecon schedule	7/24/2014	IMSTEM-0019511	IMSTEM-0019546			
53	Introduction, ImStem website		AIRM00298942	AIRM00298942			
54	Gregory Bell Curriculum Vitae						
55	Ali Brivanlou Curriculum Vitae						
56	Hentze, H., et al., Teratoma formation by human embryonic stem cells: Evaluation of essential parameters for future safety studies, <i>Stem Cell Research</i> , 2:198-210 (2009)	2009	AIRM00299300	AIRM00299312			
57	Lisa Fortier Curriculum Vitae						
58	Gordon, D. et al., Human mesenchymal stem cells abrogate experimental allergic encephalomyelitis after intraperitoneal injection, and with sparse CNS infiltration, <i>Neuroscience Letters</i> , 448(1):71-73 (2008)	1/1/2008	AIRM00299415	AIRM00299421			

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59	Olivier, E.N. et al., Differentiation of Human Embryonic Stem Cells into Bipotent Mesenchymal Stem Cells, <i>Stem Cells</i> , 24:1914-1922 (2008)	4/27/2006	AIRM00299528	AIRM00299537			
60	Zappia, E. et al., Mesenchymal stem cells ameliorate experimental autoimmune encephalomyelitis inducing T-cell anergy, <i>Blood</i> , 106(5):1755-1761 (2005)	9/1/2005	AIRM00299594	AIRM00299601			
61	Hwang, J.H. et al., Comparison of Cytokine Expression in Mesenchymal Stem Cells from Human Placenta, Cord Blood, and Bone Marrow, <i>J. of Korean Med. Sci.</i> , 24:547-554 (2009)	1/1/2009	AIRM00299613	AIRM00299620			
62	E-mail from E. Kimbrel to M. Vincent re Vijay Kuchroo with attachment	4/6/2012	AIRM00297348	AIRM00297369			
63	Raybiotech Invoice to ACT	2/8/2012	AIRM00297370	AIRM00297370			
64	Wang, X., et al, Immune Modulatory Mesenchymal Stem Cells Derived from Human Embryonic Stem Cells Through a Trophoblast-Like Stage, <i>Stem Cells</i> , 34:380-391 (2015)	1/1/2015	AIRM00171208	AIRM00171219			
65	Examining the immunosuppressive features of hESC-derived MSCs - Lab Meeting Presentation	1/6/2011	AIRM00180487	AIRM00180505			
66	Presentation: Pathways for Clinical Development of MSCs	5/9/2012	AIRM00182029	AIRM00182047			
67	Harnessing the Power of Mesenchymal Stromal Cells - Lab meeting presentation	8/26/2011	AIRM00202419	AIRM00202451			
68	E-mail from E. Kimbrel to R. Xu, copying J. Lu, re suggested edits with attachment	12/29/2010	AIRM00233507	AIRM00233523			
69	Lab Meeting slides Altering Hemangioblast Growth Conditions Exploration of Mesenchymal Stem Cells Differentiation of Blasts into Dendritic cells	11/24/2009	AIRM00281714	AIRM00281737			
70	Vodyanik et al., A mesoderm-derived precursor for mesenchymal stem and endothelial cells, <i>Cell Stem Cell</i> , 7(6):718-729 (2011)	2011	AIRM00298665	AIRM00298684			
71	Mesenchymal Stem Cells-hES-MSC, ImStem		AIRM00298962	AIRM00298963			
72	Team, ImStem website		AIRM00298985	AIRM00298986			

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73	List of references from U.S. Appl. 15/656,473		AIRM00299313	AIRM00299337			
74	EAE Induction by active immunization in C57BL/6 Mice – Hooke Laboratories	1/1/2009	AIRM00299372	AIRM00299378			
75	U.S. Patent 10,226,488	3/12/2019	AIRM00299648	AIRM00299693			
76	Seeking a Cure for MS - ImStem Biotechnologies and The Promise of Stem Cell Treatments, Bold Business (2019)	1/24/2019	AIRM00299743	AIRM00299747			
77	E-mail from R. Xu to X. Wang re MSC in EAE Study	11/5/2012	IMSTEM-0000010	IMSTEM-0000014			
78	E-mail from X. Wang to E. Kimbrel re Revision plan	6/27/2013	IMSTEM-0010863	IMSTEM-0010866			
79	E-mail from E. Kimbrel to X. Wang re Sunday	11/12/2013	IMSTEM-0016056	IMSTEM-0016057			
80	E-mail from E. Kimbrel to X. Wang re status update?	10/3/2013	IMSTEM-0016065	IMSTEM-0016069			
81	E-mail from R. Xu to J. Pachter and X. Wang re Aim 1 so far attaching specific aim 1	12/30/2012	IMSTEM-0017335	IMSTEM-0017346			
82	E-mail from R. Xu to J. Pachter and X. Wang re Aim 1 so far attaching specific aim 1	12/31/2012	IMSTEM-0017354	IMSTEM-0017367			
83	E-mail from X. Wang to L. Bao, copying A. Lazorchak, re please submit to FDA OGCTC attaching briefing	3/6/2014	IMSTEM-0022923	IMSTEM-0022961			
84	E-mail from A. Lazorchak to X. Wang re ImStemPoster2013#2	11/6/2013	IMSTEM-0025527	IMSTEM-0025528			
85	E-mail from R. Xu to X. Wang re Human Mesenchymal Stem Cell Assays	5/11/2010	IMSTEM-0042872	IMSTEM-0042873			
86	Native Audio of March 2018 Conversation between T. Shannon and J. Lu	3/1/2018	LU-00000002	LU-00000002			

Astellas' Reservation of Rights

Astellas reserves all rights to amend and update the trial exhibit list, to submit, as appropriate, additions and/or deletions to the above as the pretrial and trial process evolves, including meeting and conferring with Defendants on outstanding trial management issues and receiving the Court's rulings on any pending or later-filed motions, to remove entries that prove unnecessary, to rebut unanticipated evidence presented at trial by Defendants, and for any other permissible reason under the Federal Rules of Evidence, Federal Rules of Civil Procedure, and the Local Rules of the Court. Astellas may decide not to offer certain of the listed exhibits into evidence, and some of the exhibits are contingent on what Defendants offer into evidence. The inclusion of an exhibit on this list does not constitute an admission that the exhibit would be admissible if offered by Defendants. Astellas further reserves the right to offer into evidence any trial exhibit on this list offered by Defendants on their initial trial exhibit list or otherwise adduced at trial. Astellas also reserves the right to offer additional evidence on rebuttal and in response to any testimony, evidence, or argument offered by Defendants at trial.

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Defendants reserve all rights to amend and update the trial exhibit list, to submit, as appropriate, additions and/or deletions to the above as the pretrial and trial process evolves, including meeting and conferring with Astellas on outstanding trial management issues and receiving the Court's rulings on any pending or later-filed motions, to remove entries that prove unnecessary, to rebut unanticipated evidence presented at trial by Astellas, and for any other permissible reason under the Federal Rules of Evidence, Federal Rules of Civil Procedure, and the Local Rules of the Court. Defendants may decide not to offer certain of the listed exhibits into evidence, and some of the exhibits are contingent on what Astellas offers into evidence. The inclusion of an exhibit on this list does not constitute an admission that the exhibit would be admissible if offered by Astellas. Defendants further reserve the right to offer into evidence any trial exhibit on this list offered by Astellas on their initial trial exhibit list or otherwise adduced at trial. Defendants also reserve the right to offer additional evidence on rebuttal and in response to any testimony, evidence, or argument offered by Astellas at trial.